abnormal (n = 10) MIBI scans are compared below:

	Normal MIBI	Abnormal MIBI	p value
PTCA-Scan Interval (wks)	4.9 ± 3.3	4.2 ± 4.6	NS
Post-PTCA %DS (%)	24 ± 11	23 ± 13	NS
Min. Luminal Diam. (mm)	2.1 ± 0.5	2.3 ± 0.6	NS
d Coronary Flow Reserve	1.8 ± 0.6	1.6 ± 0.8	NS
Post-PTCA d/p APV Ratio	1.2 ± 0.7	0.6 ± 0.3	0.05

Pts with an abnormal post-PTCA d/p APV ratio <1 had significantly more reversible MIBI defects in the PTCA myocardial perfusion bed (2.5 ± 3.2 vs. 0.2 ± 0.5; p = 0.04).

We conclude that MIBI myocardial perfusion defects persist in 29% of pts between 4–5 wks after successful PTCA. The relative post-stenotic flow reduction in these patients suggests a mechanism for post-PTCA reversible perfusion defects beyond abnormal coronary flow reserve and residual stenosis alone.

MONDAY PM

913-120 New Evidence for the Ability of Gated Blood Pool Scanning to Calculate Volumes in Normal and Myopathic Left Ventricles

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Gated blood pool scanning (GBPS) with Tc-99m labeled red blood cells has been proposed as a method for determining left ventricular volumes (LVV) after correction for soft tissue attenuation; this has previously been the subject of controversy. Accurate determination of the attenuation correction factor depends upon estimating the distance (D) from the center of the LV to the chest wall. The purpose of this study was to compare LVVs measured by GBPS with an independent noninvasive measure not based on counts or the geometric assumptions used in angiography, comparing three different methods for determining D and then LVV. We studied 10 consecutive patients referred for GBPS (7/10 male, LVEF 20–72%). The standard nuclear method divided the distance from the center of LV activity on GBPS to a chest wall marker on an anterior view by the sine of the LAO image angle. The second method averaged the distance from the chest wall marker to the LV apex and the LV outflow tract on an anterior view, and divided that average by the sine of the LAO image angle. 2D echo determined D by bisecting a line between apex and mid-mitral valve and measuring D to the chest wall. The attenuation factor for Tc-99m was calculated by $e^{(-0.15*D)}$. Volumes were calculated after adjusting for background counts and peripheral blood activity (counts/cc). The reference volumes were determined by ECG gated 3D LV echo (3DE) reconstructions from rotated apical 2D echo views.

Results: All 3 methods agreed well with 3DE volumes:

Method for D	GBPS vs 3DE	r	SEE, ml	Mean Error
Standard	y = 0.85x + 6.7	0.89	22.0	8.1 ± 21.6 (NSvs0)
Average	y = 0.92x + 10.7	0.94	15.6	−2.4 ± 15.7 (NSvs0)
2DEcho	y = 1.0x + 1.6	0.93	19.9	−2.0 ± 19.3 (NSvs0)

The mean errors of the averaging and 2DEcho methods were not significantly different (p > 0.85), and the methods correlated well (slope = 0.99, r = 0.97). The standard D method had a larger mean error (p < 0.01) but no different variance (F = 2, p > 0.15).

Conclusion These results provide further support for the ability of GBPS to measure LVV with confidence. Two geometric methods for calculating soft tisue attenuation D are roughly equivalent to a direct 2D echo method method. The radionuclide averaging method to obtain D compared favorably, and relies upon easily demarcated landmarks, yielding smaller mean errors.

913-121 Cardiac Risk Assessment in Liver Transplant Candidates is not Cost-effective

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The cost-effectiveness of preoperative noninvasive screening to detect occult coronary artery disease in asymptomatic cohorts has been questioned. We sought to evaluate the efficacy of noninvasive radionuclide testing of myocardial perfusion and function in patients with end-stage liver disease who were referred for nuclear cardiology testing prior to liver transplantation. Seventy of 222 (32%) consecutively transplanted patients had stress perfusion imaging and/or radionuclide angiography (RNA) performed prior to transplantation; 28 patients had imaging with thallium-201 and 10 with technetium-99m sestamibi. Of these 38 patients (mean age: 53 ± 1.6 years; 11 females), 24 had an exercise stress and 14 had a pharmacological stress, either with dipyridamole (11) or dobutamine (3), which was well tolerated even with marked liver failure. Only 5 patients (13%) had a positive scan for ischemia; four scans were interpreted as low risk, with a defect seen in only one scan segment. Only 1 patient was catheterized. Of 28 patients who underwent RNA for detection of a cardiomyopathy (age: 50 ± 1.9 years), only 1 with a known prior myocardial infarction (3.6%) had an ejection fraction <50% and regional wall motion abnormalities. Mean ejection fraction in this group was 63 ± 1.8%. Among the 70 patients followed, there were no perioperative cardiac deaths.

Thus, neither preoperative stress perfusion imaging nor RNA appear useful for risk stratification for screening patients prior to liver transplantation. Most such patients have normal studies and a favorable outcome.

913-122 Detection of Left Anterior Descending Artery Stenosis in Patients with Left Bundle Branch Block: Exercise, Adenosine or Dobutamine Imaging?

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In patients with left bundle branch block, false positive septal perfusion defects occur commonly during exercise perfusion tomography (ExT) and this problem appears to be less frequent during pharmacologic stress using adenosine (AdT) or dipyridamole. No data exist on the value of dobutamine tomography (DobT) in this setting. Accordingly, we studied 378 consecutive patients with left bundle branch block referred for perfusion imaging during the period of January 1990 and June 1994. ExT was performed in 206, AdT in 124 and DobT in 48 patients. Coronary angiography was performed in 77, 47, and 25 patients, respectively, in these 3 groups within 1 month of the nuclear study. ExT, AdT and DobT had similar sensitivity and specificity for the detection of >50% stenosis in the circumflex (74% and 96%; 50% and 100%; 57% and 91%, respectively) and the right coronary artery (96% and 86%; 81% and 90%; 74% and 100%, respectively) and similar sensitivity in left anterior descending artery stenoses (88%, 78% and 100%, respectively). However, the false positive rate for septal defects was higher by ExT (26/57, 46%) compared to pharmacologic methods (5/42, 12%, p = 0.008) and there was no significant difference between AdT (4/32, 13%) and DobT (1/10, 10%, p = NS).

Conclusion: In the presence of left bundle branch block, pharmacologic stress imaging is more specific than ExT in the diagnosis of left anterior descending artery stenosis. DobT and AdT appear to be equally specific in these patients.

914 Vascular/Coronary Disease/Thrombosis — Basic

Monday, March 20, 1995, Noon–2:00 p.m.
Ernest N. Morial Convention Center, Hall E
Presentation Hour: 1:00 p.m.–2:00 p.m.

914-68 SDZ GPI 562, an Oral Peptidomimetic Inhibitor of the Platelet $GpIIb_bIIIa$ Abolishes Epinephrine and Shear Induced Cyclic Flow Reductions in Stenosed Monkey Carotid Arteries

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Aspirin (ASA) is the only oral agent approved as an antiplatelet agent (AA) to prevent platelet mediated thrombosis (PMT) myocardial infarction, strokes and reocclusion after thrombolysis or angioplasty. However, animal and human platelets inhibited with ASA can be reactivated to produce PMT with elevated plasma epinephrine levels or increased shear stress. In 7 anesthetized monkeys (M), mechanical carotid artery stenosis (MCAS) 70% diameter reduction with intimal damage was produced and blood flow measured (EMF probe). Cyclic flow reductions (CFR's) occurred due to acute PMT followed by embolization to the brain. ASA, 5 mg/kg IV, abolished the CFR's in all M but they returned with Epinephrine (E), 0.2 μ/kg given IV, or increase in MCAS to 85%, due to shear induced aggregation. In 8 M with 70% MCAS, after 30 minutes of CFR's, 1–2 mg/kg of the drug SDZ GPI 562 was given by stomach tube. Eighty-five ± 22 min after SDZ GPI 562, the CFR's were abolished in all 8 M. Template bleeding time increased from a control of 2.3 ± 1.0 min to 4.1 ± 1.2 min (p < 0.05). Ex vivo whole blood platelet aggregation (collagen stimulus) decreased by 76 ± 8% (p < 0.0001) and by 83 ± 10% (p < 0.0001) to ADP after SDZ GPI 562. The CFR's due to periodic acute PMT were not renewed by E, 0.2 μg/kg/min given IV for 20 minutes and/or by increased stenosis from 70% to 85% diameter reduction which increases shear from 144 ± 15 Pa to 266 ± 22 Pa (p < 0.005). CFR's due to acute PMT have been observed in patient coronary arteries at the time of angioplasty inspire of pretreatment with aspirin and heparin but could be abolished with c7E3, a monoclonal antibody inhibitor of the platelet $GpIIb_bIIIa$ which is available only for IV use. SDZ GPI 562 is likely to be a superior AA because it is available